

# Northern Everglades Initiative Update

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October 2, 2007



# Northern Everglades Legislation

- **The Northern Everglades legislation provides a dedicated state funding source for the Northern Everglades restoration**
  - **Expanding the use of the Save Our Everglades Trust Fund to include the Lake Okeechobee Watershed Protection Plan and the River's Watershed Protection Plans for the Caloosahatchee and St. Lucie.**
- **The Bill will also extend the state's commitment to provide funding for CERP and the Northern Everglades through the year 2020.**

# Northern Everglades Legislation

- **Expands Lake Okeechobee Protection Program to the Northern Everglades and Estuaries Protection Program**
- **Development of a technical plan to identify the storage and water quality treatment requirements for the Lake Okeechobee watershed by February 1, 2008.**
  - **Process Development and Engineering component**
- **Development of the Caloosahatchee and St. Lucie Rivers Watershed Protection Plans to identify watershed storage projects and water quality targets by January 1, 2009.**

# Northern Everglades Legislation

- **Implementation of projects to meet the Lake Okeechobee Total Maximum Daily Load of 140 metric tons of phosphorus to the Lake by 2015.**
- **The watershed protection plans will be the basis for Basin Management Action Plans (BMAPs)**
- **Data used in the technical plans will be updated every three years**

# Northern Everglades Legislation

- **The Caloosahatchee and St. Lucie River Watershed Protection Programs will include goals for salinity envelopes and freshwater inflow targets for each estuary**
- **Total maximum daily loads for tidal portions of Caloosahatchee River and estuary to be proposed for final agency action by December 31, 2008 by Department of Environmental Protection**



# Lake Okeechobee Phase II Technical Plan Requirements

- **Identify facilities to achieve TMDL**
  - **Size**
  - **Location**
  - **Schedule**
  - **Budget**
  - **Costs**
- **Provide additional measures to increase water storage and reduce excess water levels in lake and discharges to tide**
  - **Identify storage goal to achieve desired lake levels and inflow volumes to estuaries while meeting other water related needs**

# Lake Okeechobee Phase II Technical Plan

## Objectives

- **Meet Lake Okeechobee Watershed Total Maximum Daily Loads**
- **Manage Lake Okeechobee levels within an ecologically desirable range**
- **Manage flows to meet desirable salinity ranges for the St. Lucie and Caloosahatchee Estuaries**
- **Identify opportunities for alternative surface water supply sources in the watershed**

# Phase II Technical Plan Lake Okeechobee Watershed

## Constraints

- Provide Kissimmee River restoration flows
- Avoid precluding Everglades restoration flows
- Maintain water supply for affected water user basins
- Herbert Hoover Dike limitations
- Maintain existing levels of flood protection
- Minimum flows and levels- Lake Okeechobee, St. Lucie Estuary, Caloosahatchee Estuary, Lake Istokpoga



## Progress to Date

- **Assembled SFWMD and cooperating agency team**
- **Management measures for consideration identified**
- **Phosphorus reduction analysis for base cases and alternatives ongoing**
- **Regional Simulation Model being used for water budget analysis**
- **Base Cases and Alternatives 1-3 complete**

# Phase II Technical Plan Lake Okeechobee Watershed

## Compiled and sorted management measures by levels

- **Levels of management measures**
  - **Level 1- Already constructed/implemented or construction/implementation imminent**
  - **Level 2- Construction/implementation likely; Detailed design/activity development ongoing; Location well defined**
  - **Level 3- Implementation certainty unknown; Conceptual level of design/activity development complete; Location defined**
  - **Level 4- Implementation certainty unknown- Conceptual idea; May have rough order of magnitude cost and/or general basin location**
  - **Level 5- Implementation certainty unknown-Conceptual idea with limited information**

# Water Quantity and Quality Analyses

- **Water Quantity**
  - **Water Budget analysis using Regional Simulation Model**
- **Water Quality**
  - **Spreadsheet evaluation of phosphorus reduction**
  - **Builds upon 2007 Lake Okeechobee Protection Plan Update**

# Water Quantity Analysis

- **Water Budget analysis using Regional Simulation Model**
- **Period of record: 1970 - 2005**
- **Area north of Lake Okeechobee subdivided into 5 sub-watersheds**
  - **Upper Kissimmee**
  - **Lower Kissimmee**
  - **Lake Istokpoga**
  - **Fisheating Creek**
  - **Taylor Creek/Nubbin Slough**
- **Management measures with affect on water budget such as reservoirs or STAs are generally simulated as one facility per sub-watershed**

# Examples of Performance Measures for Water Quantity analysis

- **Lake Okeechobee**
  - **Extreme Low and High Lake**
  - **Lake Stage Envelope**
  - **Lake Minimum Water Levels**
- **Estuaries**
  - **High/Low Discharge Criteria**
  - **Salinity Envelop Criteria**
- **Kissimmee River**
  - **Comparison with Pre-Channelization Seasonal Flow Distribution**
- **Water Supply**
  - **EAA and LOSA water supply cutbacks**



# Water Quality Analysis

- **Spreadsheet analysis process**
  - **Period of record: 1991- 2005**
  - **Phosphorus reduction for each management measure estimated based upon best available information**
  - **Phosphorus reductions applied on a sub-watershed basis (9 sub-watersheds)**
  - **Shows incremental progress toward meeting Lake Okeechobee Total Maximum Daily Load**

# Technical Plan for Phase II of the Lake Okeechobee Watershed Construction Project

## Schedule

- **Formulation and draft report development** **September 2007**
- **Draft Plan for public review** **October 2007**
- **Final Plan to Governing Board** **January 2008**
- **Submit Plan to Legislature** **February 1 2008**

An aerial photograph of a landscape. In the foreground, there are green agricultural fields divided by roads. A small settlement with white buildings is visible. In the middle ground, there is a body of water, possibly a lake or a wide river. A large, bright, puffy cloud formation is visible over the water, with rays of light emanating from it. The sky is blue with some wispy clouds.

Questions



**FOR DISCUSSION PURPOSES ONLY**

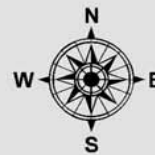
**Northern Everglades Ecosystem  
Phase II Lake Okeechobee  
Watershed Construction Project**

**Roads**  
 — SFWMD Northern Border

**Lake Okeechobee Watersheds**  
 Caloosahatchee River  
 EAA Basins  
 East Lake O. Basins  
 Fisheating Creek  
 Lake Istokpoga  
 Lower Kissimmee  
 St. Lucie Estuary  
 Taylor Creek/Nubbin Slough  
 Upper Kissimmee  
 West Lake O. Basins

**SFWMD Major Canals**  
 — County Boundary  
 — LOPP Hydrologic Boundary  
 — Basins  
 — Regional Simulation Model - Sub Watersheds

**UPDATED  
11 SEP 2007**



A horizontal scale bar with tick marks at 0, 5, 10, and 20 miles. The bar is black with white text and a white rectangular highlight under the number 5.

**Northern Everglades Ecosystem  
Phase II Lake Okeechobee  
Watershed Construction Project**

-  Roads
-  SFWMD Northern Border
- Lake Okeechobee Watersheds**
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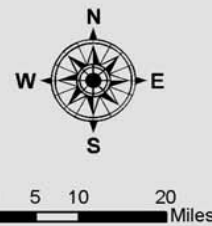
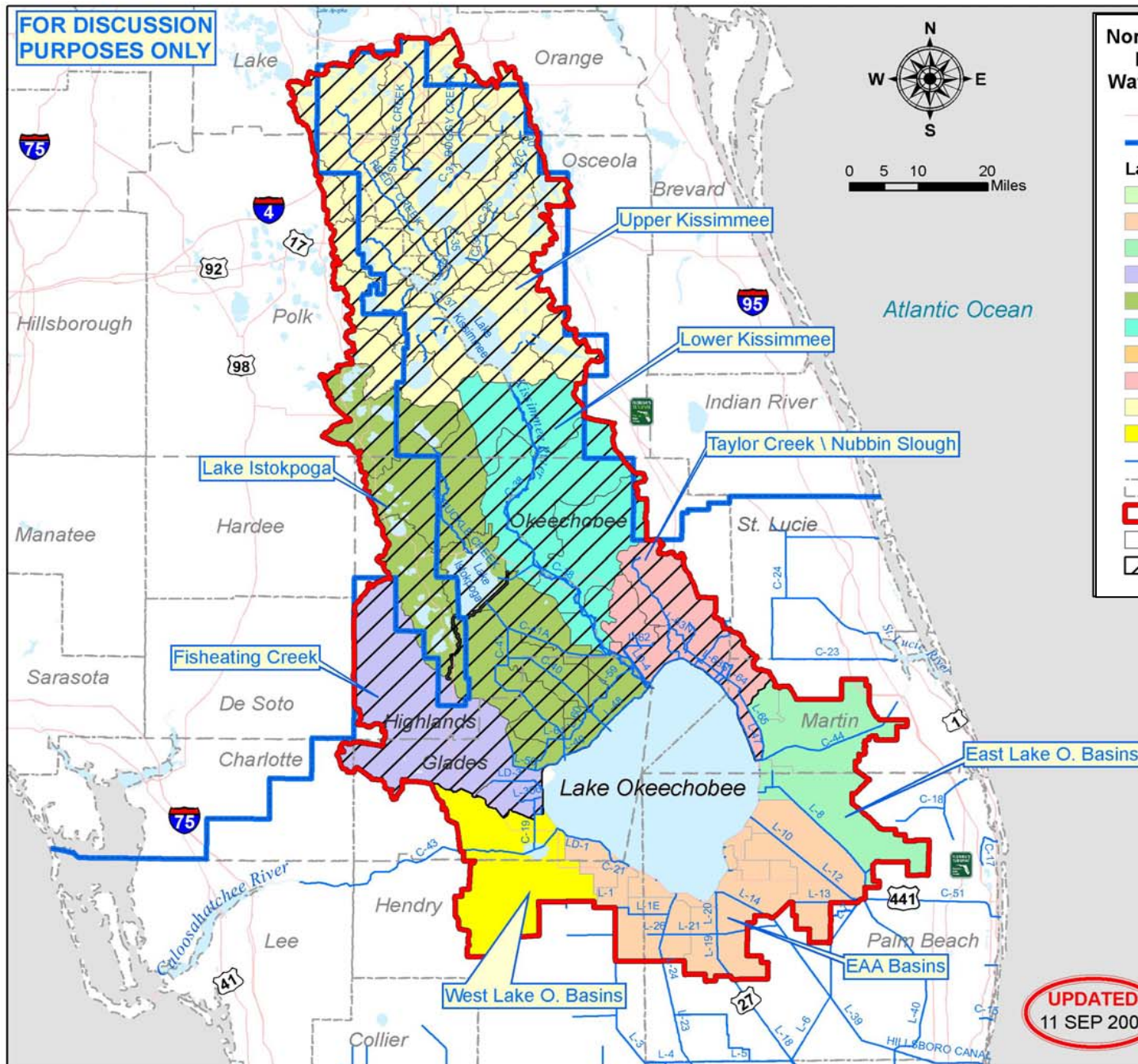
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**UPDATED**  
11 SEP 2007





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PURPOSES ONLY**



# **Northern Everglades Ecosystem Phase II Lake Okeechobee Watershed Construction Project**

- Roads
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- Lake Okeechobee Watersheds**
  - Caloosahatchee River
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